

1 **What is claimed is:**

2

3 **[Claim 1]** A method for use in a well, comprising:

4 measuring a characteristic of a supply;

5 measuring the characteristic in or near a downhole tool and spaced

6 from the supply measurement;

7 comparing the measurements.

1

1 **[Claim 2]** The method of claim 1, further comprising verifying a

2 function of the downhole tool using the comparison.

1

1 **[Claim 3]** The method of claim 1, further comprising verifying

2 that the downhole tool has set using the comparison.

1

1 **[Claim 4]** The method of claim 1, further comprising verifying

2 that a fluid from the supply is reaching the downhole tool.

1

1 **[Claim 5]** The method of claim 1, further comprising measuring

2 a characteristic within the downhole tool using a sensor that is

3 external to the downhole tool.

1

1 **[Claim 6]** The method of claim 1, wherein the source is a

2 downhole source.

1 [Claim 7] The method of claim 1, wherein the source is
2 positioned at a surface of the well.

1 [Claim 8] The method of claim 1, wherein the step of measuring
2 the characteristic in or near the downhole tool is performed using a
3 sensor located within the downhole tool.

1 [Claim 9] The method of claim 1, wherein the step of measuring
2 the characteristic in or near the downhole tool is performed using a
3 sensor located externally to the downhole tool.

1 [Claim 10] The method of claim 1, wherein the step of measuring
2 the characteristic in or near the downhole tool comprises measuring
3 the characteristic in a control line that is in fluid communication
4 with the downhole tool.

1 [Claim 11] The method of claim 1, wherein the step of measuring
2 the characteristic of the supply is performed using a first sensor and
3 the step of measuring the characteristic in or near the downhole
4 tool is performed using a second sensor.

1 [Claim 12] The method of claim 11, further comprising measuring
2 the characteristic of the supply with the second sensor.

1 [Claim 13] The method of claim 1, wherein the measuring steps
2 are made using a differential sensor.

1 [Claim 14] The method of claim 1, wherein the characteristic is
2 pressure.

1 [Claim 15] The method of claim 1, further comprising deploying
2 mitigation measures based upon the comparison.

1 [Claim 16] The method of claim 1, further comprising:
2 inserting the downhole tool, comprising a hydraulically set packer
3 connected to a tubing, into the well;
4 providing fluid communication from an interior of the tubing to a
5 setting chamber of the packer via a packer setting line;
6 the measuring a characteristic of the supply step comprising
7 measuring a pressure of the interior of the tubing near an inlet to
8 the packer setting line.

1 [Claim 17] The method of claim 16, wherein the measuring the
2 characteristic in or near the downhole tool step comprises
3 measuring the pressure in the packer setting line.

1 [Claim 18] The method of claim 16, wherein the measuring the
2 characteristic in or near the downhole tool step comprises
3 measuring the pressure in the setting chamber of the packer.

1 [Claim 19] The method of claim 16, further comprising measuring
2 a tubing pressure via the packer setting line.

1 [Claim 20] The method of claim 1, wherein the downhole tool is
2 hydraulically actuated.

1 [Claim 21] The method of claim 1, wherein the downhole tool is a
2 packer.

1 [Claim 22] A system for use in a well, comprising:
2 a sensor system of one or more sensors adapted to measure a
3 characteristic of a supply and adapted to measure the characteristic
4 in or near a downhole tool at a position that is spaced from the
5 supply measurement.

1 [Claim 23] The system of claim 22, wherein the system of one or
2 more sensors comprises a differential sensor.

1 [Claim 24] The system of claim 22, further comprising:
2 a first sensor adapted to measure the characteristic of a supply;
3 a second sensor adapted to measure the characteristic in or near the
4 downhole tool, the second sensor measuring the characteristic at
5 the position that is spaced from the supply measurement.

1 [Claim 25] The system of claim 24, wherein the second sensor is
2 positioned external to the downhole tool.

1 [Claim 26] The system of claim 24, wherein the second sensor is
2 positioned within the downhole tool.

1 [Claim 27] The system of claim 24, further comprising:

2 a control line in fluid communication with the downhole tool and the
3 supply;

4 the second sensor is adapted to measure the characteristic in the
5 control line.

1 [Claim 28] The system of claim 24, further comprising:

2 the downhole tool having an internal chamber;

3 the second sensor is adapted to measure the characteristic in the
4 internal chamber.

1 [Claim 29] The system of claim 24, wherein the second sensor is
2 further adapted to measure the characteristic of the supply.

1 [Claim 30] The system of claim 22, wherein the source is a
2 downhole source.

1 [Claim 31] The system of claim 22, wherein the characteristic is
2 pressure.

1 [Claim 32] The system of claim 22, wherein the one or more
2 sensors are pressure gauges.

1 [Claim 33] The system of claim 22, further comprising:

2 a completion tubing;

the downhole tool comprises a packer connected to the completion tubing, the packer having a setting chamber.

[Claim 34] The system of claim 33, wherein the sensor system comprises a sensor adapted to measure the characteristic in the setting chamber.

[Claim 35] The system of claim 33, further comprising:
a packer setting line in fluid communication the packer setting chamber;
the sensor system comprises a sensor adapted to measure the characteristic in the packer setting line.

[Claim 36] The system of claim 22, further comprising:
a lower completion in the well;
an upper completion above the lower completion;
an isolation system between and in fluid communication with the lower completion and the upper completion, the isolation system is adapted to selectively fluidically isolate the lower completion from the upper completion;
the upper completion comprising:
a packer comprising the downhole tool, the packer having a setting chamber therein;
a gauge mandrel below the packer that has the one or more sensors therein;
an annular control valve below the gauge mandrel;
an in-line control valve below the annular control valve;

15 a packer setting line in fluid communication with the setting
16 chamber of the packer and an interior passageway of the upper
17 completion at a position below the in-line control valve;
18 a pressure sensor in the gauge mandrel in fluid communication with
19 the packer setting line adapted to measure a pressure in the control
20 line.

1

1 [Claim 37] The system of claim 36, further comprising a pressure
2 sensor in the gauge mandrel in fluid communication with the
3 interior passageway of the upper completion at a position below the
4 in-line control valve.

1

1 [Claim 38] A well completion system, comprising:
2 a completion tubing;
3 a packer connected to the completion tubing, the packer having a
4 setting chamber therein;
5 a packer setting line providing fluid communication between the
6 completion tubing and the packer setting chamber;
7 a pressure gauge adapted to measure a pressure in the packer
8 setting line.

1